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#10 Declaration
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(la)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Robert Olodort, et al.) Examiner: EDWARDS, Timothy
Serial No.: 10/008,824) Art Unit: 2635
Filed: November 30, 2001)
For: FOLDABLE KEYBOARD)

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Technology Center 2600

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.132

I, Robert Olodort, declare the following:

1. I am an inventor of the above-identified patent application. I am also the founder and Chief Technical Officer of Think Outside, Inc., the assignee of the present application.
2. I have reviewed the application, including the originally filed claims, and I have also reviewed a copy of the pending claims (a copy of which is attached as Exhibit A).
3. I have over 25 years of experience in creating and developing consumer and professional products, which include keyboard and portable keyboard-related products. As such, I consider myself to be, at minimum, one of ordinary skill in the art of keyboards, and I am generally aware of the knowledge of those of ordinary skill in the art of keyboards.
4. The declaration made herein is to establish that before the filing date of the present application, it was *not* desirable for keyboard keys to be maintained in constant or prolonged periods of "shorted" states (i.e., closing an electrical circuit positioned below a key

to provide a signal to a signal receiver that a key is pressed) for the reasons provided herein.

5. Prior to the filing date of the present application, typical key switch designs were susceptible to permanent deformation. These key switches utilized deflectable conductive members that, with a key press, contacted each other to close the key switch. That is, when one of the conductive members was deflected by compression and made to contact an opposing conductive member, an electrical circuit was formed. By default, the key switch is open because the conductive members are biased apart in the area of the switch. One conductive member, for example, could have a resilient bubble form. When the bubble is depressed or collapsed momentarily to close the switch and then released, the resiliency of the bubble causes the bubble to separate from the opposing conductive member. However, when compressed for long periods, the conductive members can become permanently deformed, preventing proper functionality of the key(s). Most often, the conductive members remain in contact with each other because one or more of the members loses its resiliency, causing a permanent shorting of the key switch. Key switch shorting is not common in desktop-style keyboards, but is a problem with portable keyboards that collapse (e.g., fold), in which keys are compressed when folded.

6. There have been patents for foldable keyboards filed prior to the filing date of the present application that attempted to address the problem of key switches shorting permanently or membrane layers deforming. For example, U.S. patent 5,677,826 to Sellers (hereinafter "Sellers") discloses a collapsible keyboard in which "quite advantageously, each key cap member 40 can be retracted, for storage and transport of the computer, through a distance (H) equal to approximately one half of this effective spring height ***without closing any of the contact pairs 52, 60.***" (emphasis added). (Sellers, col. 5, lines 63 – 67, col. 6, lines 1 – 3, and FIGS. 3A – 3C, a copy of which is attached as Exhibit B). As such, the prior art, having recognized the problem of key switch deformation, teaches key switches should not be shorted for collapsible keyboards in the storage position.

7. The pending claims of the present application, in direct contrast to conventional wisdom, are directed towards shorting the key switch in the storage/foldable position. Our invention avoids the problem of key switch deformation because of an improved key switch

structure (e.g., materials, elastomeric dome, shape, etc.). (See Detailed Description pages 22 – 25 and FIGS. 15A – 15B). As such, we teach that shorting the key switch is allowable in the foldable keyboard position.

8. Based on the above description and support from the attached exhibits, conventional wisdom, prior to the filing date of the present application, held that it was *not* desirable for keys of a foldable keyboard to be maintained in constant or prolonged periods of "shorted" states, because of the problem of key switch deformation. The claims of the present application, with support from the Detailed Description, teach away from conventional wisdom.

9. I declare, to the best of my knowledge, that all statements made in this document are true, and that all statements made on the information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-identified patent application or any patent issued thereon.

Dated: 2-12-04


Name: Robert Oldorf